Investigation of Particle-Like Solutions of a Nonlinear Scalar Field Equation 307/56-35-2-20/60

is obtained. There are 3 figures and 10 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: March 22, 1958

Card 3/3

21(1), 24(7)

SOV/51-6-5-25/34

AUTHORS: Glasko, V.B., Maslov, V.P., Poniman, V.I. and Sokolov, N.D.

TITLE: On the Type of Correlation Function for the Helium Atom (O vide korrelyatsionnoy funktsii dlya atoma geliya)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 5, pp 695-700 (USSR)

ABSTRACT: In molecular calculations correlation in the motion of electrons is allowed for by introducing into the wave-function an additional factor dependent on inter-electron distance r_{ij} (Ref. 1).
In analogy with the first approximation in the Hartree-Fock calculations, carried out by Hylleraas (Ref 2), this multiplier can be written for a two-electron system in the form

$$f(r_{12}) = 1 - dr_{12} \qquad (1)$$

where d is a variational parameter. In the general case the correlation function should depend on three correlation variables and f can be then represented as a series in powers of these variables (Refs 2, 3). When only one correlation variable is used the choice of the function $f(r_{12})$ in the form given by Eq (1) is an arbitrary one. The question arises as to whether this choice is the best possible one. This question is answered by determining the correlation function $f(r_{12})$ for the helium

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On the Type of Correlation Function for the Helium Atom

atom by a variational method. The result is shown as curve I in a figure on p 700; curve II represents the Hylleraas function given by Eq (1). Both curves are plotted as functions of distance in atomic units. The figure shows clearly that the correlation function approximation in the form of Eq (1) is practically the best choice, at least for atoms. The paper is entirely theoretical. There are 1 figure and 6 references, 3 of which are Soviet, 1 English, 1 German and 1 mixed (Soviet, English and French).

SUBMITTED: November 20, 1958

Card 2/2

9(3), 18(0)

AUTHORS: Bonch-Bruyevich, V. L., Glasko, V. B. SOV/20-124-5-15/62

TITLE: On the Energy Spectrum of Electrons in the Non-ideal Lattice of a Metal (Ob energeticheskom spektre elektronov v neideal'noy reshetke metalla)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1013-1017 (USSR)

ABSTRACT: The influence exercised by the microdefects of structure on the energy spectrum of a metal is of essential importance for some problems of the physics of solids. It especially forms the quantum-mechanical basis of the theory of chemical adsorption on a metal, and it also plays an important part in impurity scattering. Solution of this problem requires considerable dynamic investigation. The authors investigate defects of the type of the hydrogen-like atoms which penetrated into the lattice. (All quantitative results may be applied without difficulty also to more complicated cases.) The problem is then reduced to the investigation of the variation of energy and electron-density on the addition of an electron to the system while maintaining the neutrality condition. This problem may be solved comparatively quickly as soon as the

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On the Energy Spectrum of Electrons in the Non-ideal SOV/20-124-5-13/62
Lattice of a Metal

"one-particle" Fermi Green function $G(x,y)$ for the given system is known. Here x y denote four-points and it holds that $x = \{x_0 \; \vec{x}\}$. The "one-particle" density matrix $R(\vec{x},\vec{y};t)$ for the ground state and the frequencies ζ occurring in the spectral decomposition of the function $G(x,y)$ immediately supply the required energy variations. These frequencies are, within the framework of the improved perturbation theory, the eigenvalues of a here given and explained equation. This equation is obtained by successively solving the many-electron problem without the otherwise necessary assumption of smallness of the dimensionless coupling constant. Although this equation agrees formally with certain Schroedinger equations for an electron, it actually describes a many-electron system, and its eigenvalues have by no means the meaning of anything like "One-electron-energies". The most sensible way of dealing with the problem according to the authors opinion consists in calculating the effects connected with the structural effect in the case of a known Fermi spectrum of electrons in a perfect lattice.

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On the Energy Spectrum of Electrons in the Non-ideal Lattice of a Metal SOV/20-124-5 15/62

It is possible to subdivide all metals into two classes with respect to the given type of impurities (or other structural microdefects) and the same is the case with all impurities with respect to the given metal according to whether "local levels" exist or not. In the former case the impurities which have penetrated are neutral in the ground state and in the second they are ionized. This subdivision is however by no means absolute, for with a variation of the electron concentration in the metal the system is able to pass from one class to the other. The here discussed qualitative considerations are convincing only if the critical parameter values of the problem are plausible. For this purpose the above mentioned equation was numerically solved by means of the "Strela" computer of the Vychislitelnyy tsentr MGU (Computing Center of Moscow State University) under certain conditions mentioned. The critical values of the coupling constant and the first eigenvalues are given in a table. The authors thank F. F. Volkenshteyn, S. Z. Roginskiy, and A. N. Tikhonov for discussing this paper.

Card 3/4 There are 2 tables and 8 references, 7 of which are Soviet

On the Energy Spectrum of Electrons in the Non-ideal Lattice of a Metal SOV/20-124-5-15/62

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: October 31, 1958, by A. F. Ioffe, Academician

SUBMITTED: August 12, 1958

Card 4/4

PHASE I BOOK EXPLOITATION SOV/5921

Akademiya nauk SSSR. Institut fizicheskoy khimii

Problemy kinetiki i kataliza. [t] 10: Fizika i fiziko-khimiya kataliza (Problems of Kinetics and Catalysis. [vol.] 10: Physics and Physico-Chemistry of Catalysis) Moscow, Izd-vo AN SSSR, 1960. 461 p. Errata slip inserted. 2,600 copies printed.

Eds.: S.Z. Roginskiy, Corresponding Member of the Academy of Sciences USSR, and O.V. Krylov, Candidate of Chemistry; Ed. of Publishing House: A.L. Bankvitser; Tech. Ed.: G.A. Astaf'yeva.

PURPOSE: This collection of articles is addressed to physicists and chemists and to the community of scientists in general interested in recent research on the physics and physical chemistry of catalysis.

COVERAGE: The articles in this collection were read at the conference on the Physics and Physical Chemistry of Catalysis organized by the Otdel khimicheskikh nauk AN SSSR (Section of Chemical Sciences, Academy of Sciences USSR) and by the Academic Council on the problem of "the scientific bases for the selection of catalysts." The Conference was held at the Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR) in Moscow, March 20-25, 1958. Of the great volume of material presented at the conference, only papers not published elsewhere were included in this collection.

32279

S/188/60/000/02/01/006
B020/B054

5.4210

AUTHORS: Bazarov, I. P., Glasko, V. B.

TITLE: The Binary Distribution Function for a Liquid and the Crystallization Criterion

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, 1960, No. 2, pp. 3 - 4

TEXT: As opposed to gases, the particles in liquids are situated within the range of van der Waals' forces. The potential of intermolecular interaction is assumed to be determined by the function $\Phi(r)$, and divisible into a long-range part $\Phi^0(r)$ and a short-range part $\Phi^1(r)$: $\Phi(r) = \Phi^0(r) + \Phi^1(r)$. According to Ref. 1, the expressions

$\frac{1}{\theta}\Phi^0(r) = v\psi$ and $\psi(r) = \frac{1}{v\theta}\Phi^0(r)$ (1) apply to the long-range forces (v is the particle volume, and $\theta = kT$); equations (2) and (3) are obtained for the binary distribution function in first approximation (Refs. 1,2). When solving equation (3) by means of the Fourier integrals,

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The Binary Distribution Function for a Liquid and the Crystallization Criterion

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the following equation is obtained:

$$F_2(r \mid \Phi^0) = 1 - 2/\pi\Theta r \int_0^\infty \frac{\sin\nu r \int_0^\infty \Phi^0(r) r \sin\nu \, r dr}{1 + (4\pi/v\Theta\nu) \int_0^\infty \Phi^0(r) r \sin\nu \, dr} \quad (4).$$

The denominator in the integral (4) at $\Theta < \Theta_0 = kT_0$ vanishes for any value of ν. The temperature T_0 is determined from the condition

$$T_0 = -\left[4\pi/vk\right] \min \min I(\nu) \quad (5), \text{ where } I(\nu) = \int_0^{\infty+} \Phi^0(r) \frac{\sin\nu r}{\nu r} r^2 dr.$$

Equation (4) for the binary distribution function of liquids applies to temperatures $T > T_0$. Condition (5) determines the phase transition - the crystallization of the liquid. It only applies if min min $I(\nu) < 0$. If $\Phi^0(r)$ changes its sign with r, the minimum minimorum of the integral $I(\nu)$ in dependence on the form of $\Phi^0(r)$ may be attained not only at $\nu = 0$ but also with other ν. If min min $I(\nu)$ appears at $\nu = 0$,

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condition (5) agrees with the crystallization criterion of A.A. Vlasov (Ref. 3): $T_0 = -(4/kv) \int_0^{\infty+} \Phi^0(r)\, r^2\, dr$ (6), but with the principal difference that Vlasov puts the total potential of intermolecular interaction under the integral whereas (5) and (6) put only the potential $\Phi^0(r)$ of the long-range forces under the integral. This peculiarity of condition (5) suggests that the crystallization of the liquid is determined by the long-range forces of intermolecular interaction whereas the short-range forces are only of importance to the determination of the lattice constant. If the function $\Phi^0(r)$ is chosen in the way indicated and is to be included in the group which depends on some parameter α, min min $I(\nu) = I_1$ will be really attained at $\nu = \nu_1 = 0$ for any value $\alpha = \alpha_1$. It may, however, be that a value $\alpha = \alpha_2$ is indicated at which min min $I(\nu)$ of the same quantity I_1 is attained at $\nu = \nu_2(\alpha_2) > 0$. Thus, it is evident that there is an $\alpha = \bar{\alpha}$ at which min min $I(\nu) = I(\nu_1) = I(\nu_2)$; in this case, it has the highest possible value for a chosen

The Binary Distribution Function for a Liquid and the Crystallization Criterion

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$\Phi^0(r)$. As had been stated in Ref. 4, the division of $\Phi(r)$ into a long-range component $\Phi^0(r)$ and a short-range component $\Phi^1(r)$ is not unique, and must be carried out on the basis of additional physical considerations. With the use of $\Phi^0(r)$ found in this way, the crystallization temperature T_0 can be divided into $\Phi^0(r)$ and $\Phi^1(r)$. This also applies to $\Phi(r)$ when the experimental T_0 is substituted into (5). There are 4 Soviet references.

ASSOCIATION: Kafedra statisticheskoy fiziki i mekhaniki (Chair of Statistical Physics and Mechanics)

SUBMITTED: April 15, 1959

BONCH-BRUYEVICH, V.L.; GLASKO, V.B.

Theory of chemical adsorption on metals. Probl. kin. i kat. 10:141-154 '60. (MIRA 14:5)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta.
(Adsorption)

GLASKO, V.B.; SVESHNIKOV, A.G.

Electric fields of ocean currents produced by the earth's magnetic field. Geomag. i aer. 1 no.1:73-81 Ja-F '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova, fizicheskiy fakul'tet.
(Ocean currents) (Electric fields) (Magnetism, Terrestrial)

89273

S/181/61/003/001/005/042
B102/B212

24.7500 (1136, 1143, 1160)

AUTHORS: Bonch-Bruyevich, V. L. and Glasko, V. B.

TITLE: Theory of electron states related to dislocations. I. Linear dislocations

PERIODICAL: Fizika tverdogo tela, v. 3, no. 1, 1961, 36-46

TEXT: While quantum-mechanical investigations of electron spectra of real semiconductors have so far been limited to point effects, experimental results seem to indicate the existence of acceptor-type levels which are related to linear dislocations. This problem has been studied theoretically by Read, but his purely classical considerations showed no satisfactory results. The authors have now made a quantum-mechanical study of the effect of linear dislocations upon the energy spectrum of an electron (hole) system in a semiconductor. Since this problem is very complicated, it is necessary to start with a simplified model. The dislocations in question are defects which are able to trap electrons, or holes but they expand in one direction only. These linear dislocations are characterized by a quasi-continuous energy spectrum. There are one or several one-

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dimensional "dislocation bands", the width of which should be comparable to that of the conduction band; it may be overlapped by intrinsic bands of the crystal. Dislocation bands may be an important factor in the electrical conductivity of semiconductors at sufficiently low temperatures if there are no carriers in the intrinsic bands; a strong anisotropy in the electric conductivity is expected in this case. The dislocation bands of Ge and Si are assumed to have n-type conductivity. However, this can be only affirmed if it is known, to what degree the band is filled. First, the mathematical formulation of the problem is discussed in detail. To set up the wave equation, it is assumed that the bands are simple and the wave functions of trapped holes change smoothly enough with increasing distance from the dislocation. Starting from the well-known wave equation in cylindrical coordinates $\left\{E(-i\hbar\nabla_{r,\varphi}, -i\hbar\frac{\partial}{\partial z}) + V(r,\varphi) - W\right\}\psi = 0$ with the substitution $\psi = e^{ikr}\chi(r,\varphi)$ one obtains: $\left\{-\left[\hbar^2/2m(k)\right]\nabla^2_{r,\varphi} + V(r,\varphi) - \lambda\right\}\chi = 0$ with $W = \lambda + E(0,0,\hbar k)$. Now, a linear dislocation is considered to be a charged line, and the potential behavior near this dislocation is examined. $V(r,\varphi)$ is defined 1) by the screened electrostatic field V_c of the charged

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Theory of electron states related...

dislocation, and 2) by the deformation potential V_d, which are given by $V_o(r) = -(2e/2\pi\epsilon)K_o(r/L)$ and $V_d \sim \sin\varphi/r$; ϵ is the dielectric constant; $q\varphi > 0$, $L = \sqrt{\frac{\epsilon kT}{4\pi ne^2}}$ is the Debye radius; and n is the concentration of majority carrier in the "intrinsic" band. Concrete examples (hole spectrum) are used to discuss the problem. The problem is reduced to a determination of the solutions of the corresponding Cauchy problem. The eigenvalues are computed, and the dependence of the integral curves upon the introduced dimensionless quantities $x = r/L$, $\lambda' = -\lambda/E_o$, $g^2 = n_d e^2/2\pi\epsilon E_o$ ($n_d = q/e$ is the number of electrons per unit length of dislocation; d is the lattice constant; and E_o is the characteristic energy ($E_o = \hbar^2/2mL^2$)) is investigated graphically. Some of these quantities have been tabulated for m = 0 and -1; a rough evaluation (for $d = 5\cdot10^{-8}$ cm, $m = 0.2m_o$, $\epsilon = 16$) yields: $E = 1.12\cdot10^{-20}\ n\cdot\frac{300}{T^oK}$ ev, $g^2 = 2.56f\cdot10^{18}\ n^{-1}\frac{T^oK}{300}$, and $L = 4.8\cdot10^2\ n^{-1/2}(T^oK/300)^{1/2}$. Therefore, the edge of the dislocation

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band is a function of temperature. The authors thank S. G. Kalashnikov and A. N. Tikhonov for discussions, and the laboratory assistant L. F. Suzdal'tseva for helping in numerical computations. There are 4 figures, 4 tables, and 10 references 5 Soviet-bloc and 5 non-Soviet-bloc.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet Fizicheskiy fakul'tet (Moscow State University, Division of Physics) Kafedra poluprovodnikov i kafedra matematiki (Department of Semiconductors and Department of Mathematics)

SUBMITTED: May 16, 1960

Card 4/4

29316
S/109/61/006/010/014/027
D266/D302

9.4230

AUTHORS: Glasko, V.B., Zyuzin-Zinchenko, A.A., and Lopukhin, V.M.

TITLE: The influence of beam scalloping on the noise figure of TWT's

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 10, 1961, 1688 - 1699

TEXT: The purpose of the present work is to study on a simplified model the effect of varying beam cross section on the minimum noise figure. Although the work is based on material published prior to 1955 a number of recent references on ultra-low noise amplifiers are included. The authors use a three-electrode gun which ensures a sufficiently smooth potential profile. The varying beam radius is obtained by calculating the trajectory of an edge electron in the combined electric and magnetic fields neglecting the effect of space charge forces. Without going into the details of calculations the following formula is given for the beam radius

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The influence of beam ...

$$b = b_0[1 + \Delta \sin \beta k(x)\, x], \qquad (1)$$

where b_0 is the radius in infinite magnetic field; x - distance along the axis in mm-s, Δ and $\beta k(x)$ are parameters representing the amplitude and wave number of scalloping, and k(x) is given by the approximate formula

$$k(x) = 820(x + 6)^{-3} + 0.4. \qquad (2)$$

In the subsequent calculations they employ S. Bloom and R. Peter's (Ref. 25: RCA Rev., 1954, 15, 1, 95) transmission line equations but assume that the reduced plasma frequency varies due to beam scalloping. 22 different cases are investigated which are summarized in a table. The inhomogeneous transmission line equations are solved (with the usual input conditions of uncorrelated current and velocity fluctuations) for these parameters on a computer and the results, noise current density against distance, are plotted in a number of figures. It appears that under the conditions investigated the noise due to shot noise is negligible so the subse-

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quent calculations are confined to the study of noise due to velocity fluctuations at the potential minimum. In Figs. 10a and 10 b the noise figure is plotted against normalized drift distance. [Abstractor's note: Details of the calculation are not given, but it is noted that the beam entering the helix is assumed to have a constant diameter]. It is found that with the exception of one curve the minimum noise figure is increased if the scalloping of the beam is taken into account. The noise generated by a beam of constant diameter is given by the dotted lines. The numbers on the curves refer to the cases investigated. The final conclusion is that if Δ and β are different of zero the minimum available noise figure is increased. There are 12 figures, 1 table and 27 references: 7 Soviet-bloc and 20 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: J. Berghammer, S. Bloom, J. Appl. Phys., 1960, 31, 3, 454; W.M. Mueller, [illegible]R. Currie, J. Appl. Phys., 1959, 30, 12, 1876; R. Adler, Proc. I.R.E., 1959, 47, 10, 1713; C. Curtis, C. Johnson, J. Appl. Phys., 1960, 31, 2, 338.

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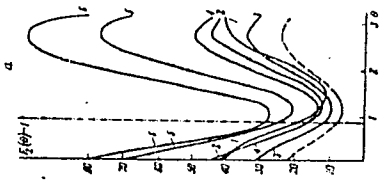
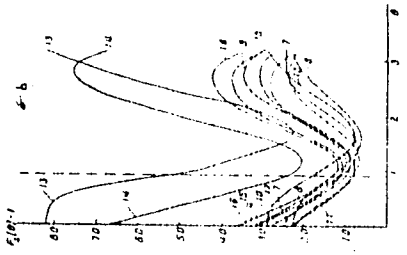
The influence of beam ...

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova, Kafedra radiotekhniki (Physics Faculty of the Moscow State University im. M.V. Lomonosov, Department of Radioengineering)

SUBMITTED: December 22, 1960

Figs. 10a and 10b: Dependence of $F_2 - 1$ on $\Theta = \beta_p$ (β_p is the reduced plasma wave number) for case I (case I corresponds to a certain choice of the potential profile).





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S/179/62/000/002/009/012
E199/E413

AUTHORS: Glasko, V.B., Romanovskiy, Yu.M. (Moscow)

TITLE: Investigation of complex compound frequencies of an elastic aeroplane depending on its velocity

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.2, 1962, 105-109

TEXT: In this paper the authors consider the effect of the torsional oscillations of a wing on the nature of the bending oscillations produced by application of ailerons. The problem is presented in such a way that it can be solved with computing machines. The solution is based on the dimensionless equation derived by S. Strelkov and A. Kharlamov

$$z'' \; h_0 \gamma_1 \theta'' \; h_0 \gamma_2 \beta'' \; [illegible]$$

$$-\mu_{11} v^2 \left[\frac{a}{h_0} (\theta + h_{12} \beta) + \Delta_1 \theta' + h_{13} \beta' \; [illegible] \right] \; 0$$

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Investigation of complex ...

$$\ddot{\eta} + \sigma_1 \frac{B_0}{b_0} z' + \sigma_2 \beta' + \xi_1 \eta + \frac{\mu_{12}}{\mu_1} \frac{w}{b_0} \Delta_1 \dot{z} + \Delta_2 \dot{\beta} + \Delta_3 \frac{w}{b_0} \beta_1 +$$
$$+ \mu_{21} \Delta_2 \frac{w}{b_0} \left[\frac{w}{b_0} (\eta + h_{22} \beta) + \Delta_1 \dot{z} + h_{23} \dot{\beta} + \frac{h_{24}}{\mu_2} \beta_1 \right] = 0$$

$$\ddot{\beta} + \sigma_2 \frac{B_0}{b_0} z' + \sigma_3 \eta' + \xi_4 \beta + \frac{\mu_{31}}{\mu_1} \frac{w}{b_0} \Delta_1 \dot{z} + \Delta_2 \dot{\beta} + \Delta_3 \frac{w}{b_0} \beta_1 +$$
$$+ \mu_{31} \Delta_1 \frac{w}{b_0} \left[\frac{w}{b_0} (\eta + h_{32} \beta) + \Delta_1 \dot{z} + h_{33} \dot{\beta} + \frac{h_{34}}{\mu_3} \beta_1 \right] = 0 \qquad (1)$$

It is assumed that Theodorsen's function $C(k) = 1$, that the wing is cantilevered and oscillates according to standard bending and twisting functions of the first order, $z(t)$, $\theta(t)$ and $\beta(t)$ are variables corresponding to coordinates of bending and torsion of the wing and to aileron deflection, w and h_0 - velocity and chord of the wing, σ_1, σ_2, σ_3 and σ_4 - parameters determining mechanical equilibrium of the wing and the aileron, ξ_1, ξ_2, ξ_3 - squares of parameters of frequencies of bending and torsion of the wing and rotation of the aileron. The problem is reduced to finding the characteristic indices of

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$$\sum_{s=1}^{3} \alpha_{ks} y_s'' + w \sum_{s=1}^{3} \beta_{ks} y_s' + w^2 \sum_{s=1}^{3} \gamma_{ks} y_s = 0 \qquad (k = 1, 2, 3) \qquad (2)$$

where $y_1 = z$, $y_2 = \theta$, $y_3 = \rho$. Coefficients of α_{ik}, β_{ik} and γ_{ik} do not depend on w, their values can be obtained by equating Eq.(1) with Eq.(2). Assume that $y_k = y_{k0} \exp \lambda t$, then

$$p_{i1} y_{10} + p_{i2} y_{20} + p_{i3} y_{30} = 0 \qquad (i = 1, 2, 3)$$

$$p_{ik} = \alpha_{ik} \lambda^2 + w \beta_{ik} \lambda + w^2 (1 - \delta_{ik}) \gamma_{ik} + \delta_{ik} \xi_i, \qquad \delta_{ik} = \begin{cases} 1 & i = k \\ 0 & i \neq k \end{cases}$$

Consequently characteristic equation of (2) will be

$$\text{Det} \left\| p_{ik}(\lambda) \right\| = 0 \qquad (3)$$

This equation has 6 routs of $\lambda = \delta \pm j\omega$ type.
Of particular interest is

$$D(\lambda) \equiv D_1(\delta, \omega) + jD_2(\delta, \omega) = 0$$

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Investigation of complex ...

and its solution is worked out in detail. Graphs of roots for a number of values of ω are included. The results show that the roots corresponding to torsional oscillations of the wing and to oscillations of the aileron do not cause any reduction in the oscillatory stability margin of the system. It is shown that a system having two degrees of freedom is adequate for the investigation of flutter. The method can be used to determine a whole range of frequencies depending on various parameters. There are 3 figures.

SUBMITTED: January 16, 1961

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S/181/62/004/002/004/031
B102/B136

24,7100 (1035, 1043, 1055)

AUTHORS: Glasko, V. B., and Mironov, A. G.

TITLE: Coulomb potential screening in nondegenerate semiconductors

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 336-342

TEXT: V. L. Bonch-Bruyevich and Ch. M. Kogan (FTT, 1, 1221, 1959) and Bonch-Bruyevich and Mironov (FTT, 2, 469, 1960) have already calculated screening potentials by the Green functions method. Their results are now used to determine the Coulomb potential screening in a nondegenerate electron gas by the same method. In this problem the electron gas is isotropic, and for the lattice field effective electron mass m replaces true mass, while ε is the dielectric constant. Positive charge is uniformly distributed and electron concentration n is given and constant. In this case, screening is independent of equilibrium. The temperature range considered is characterized by the condition $\frac{E_c - \mu}{kT} \gg 1$ (μ - Fermi level, E_c - bottom of conduction band). The point charge Ze is placed in

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Coulomb potential screening in...

the coordinate origin, its potential at distance r is given by

$$\varphi(r) = \frac{Ze}{\varepsilon r}\,\frac{2}{\pi}\int_0^\infty \frac{\sin kr}{k}\,\frac{dk}{1+\alpha f(k)}, \qquad (1)$$

with

$$f(k) = \frac{k_0^3}{k^3}\exp\left(-\frac{k^2}{4k_0^2}\right)\int_0^{\frac{k}{2k_0}}\exp(u^2)\,du > 1,$$

$\alpha = \left(\frac{\hbar\omega_L}{\pi T}\right)^2$ is the binding constant; $\omega_L = \sqrt{\frac{4\pi ne^2}{\varepsilon m}}$ the plasma frequency, and $k_0 = \sqrt{\frac{2m\alpha T}{\hbar^2}}$ the "thermal" wave number. For Ge with $m = 0.2\,m_0$ and $\varepsilon = 16$, at liquid-nitrogen temperature and $n = 10^{17}\ cm^{-3}$, $\alpha \approx 1$. For $\alpha \gg 1$, an electron gas is also nondegenerate for $\frac{m(\alpha T)^2}{4\pi\hbar^2 e^2} \leqslant n < \frac{1}{5\pi^2}\left(\frac{2m\alpha T}{\hbar^2}\right)^{3/2}$. For Ge at nitrogen temperature this is valid for all $n < 2.5\cdot 10^{17}\ cm^{-3}$.

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Coulomb potential screening in...

$\varphi(r)$ at large ($r \gg k_0^{-1}$)

$$\Phi(r) = \frac{Ze}{\varepsilon r}\exp\left(-\frac{r}{r_0}\right), \quad r_0 = \sqrt{\frac{\varepsilon kT}{4\pi ne^2}}, \tag{2}$$

and small ($r \ll k_0^{-1}$) distances

$$\Phi(r) = \frac{Ze}{\varepsilon r}\exp(-\lambda r)\cos\lambda r, \quad \lambda = \sqrt[4]{\frac{4\pi ne^2 m}{\hbar^2}}. \tag{3}$$

have already been determined. Now, under the above conditions, the screening potential is calculated for any distances, the limits of applicability of (2) and (3) are determined and a numerical method is discussed. First, $V(x) = \frac{r\varphi}{Ze}$ $\varphi(r)$ is determined, using the dimensionless variables $x = rk_0$ and $q = kk_0^{-1}$:

$$V(x) = \sum_{k=0}^{\infty}\exp(-2\tau_k x)(A_k\cos 2\xi_k x - B_k\sin 2\xi_k x). \tag{5}$$

$$C_k = \frac{2\xi_k^2}{3\xi_k^2 + 2\tau_k^2 + \frac{2}{\beta^2}};$$

$$A_k + iB_k = C_k, \quad \xi_k + i\tau_k = \zeta_k,$$

Card 3/5

The ζ_k are the roots of equation (6): $\zeta^3 + \frac{a}{c} F(\zeta) = 0$, which is studied in detail. It has no real roots, on the imaginary axis ($\zeta = i\eta$) it has two roots (η_0, η_1) for small $a > 0$. At $a_0 = 4.19$, $\eta_0 = \eta_1 = 1.16$, at $a > a_c$ no real roots exist. In the remaining region ($\zeta = \rho e^{i\varphi}$, $0 < \varphi < \pi$), $\Delta_+(\zeta)$ can be numerically solved, the complex roots being given by

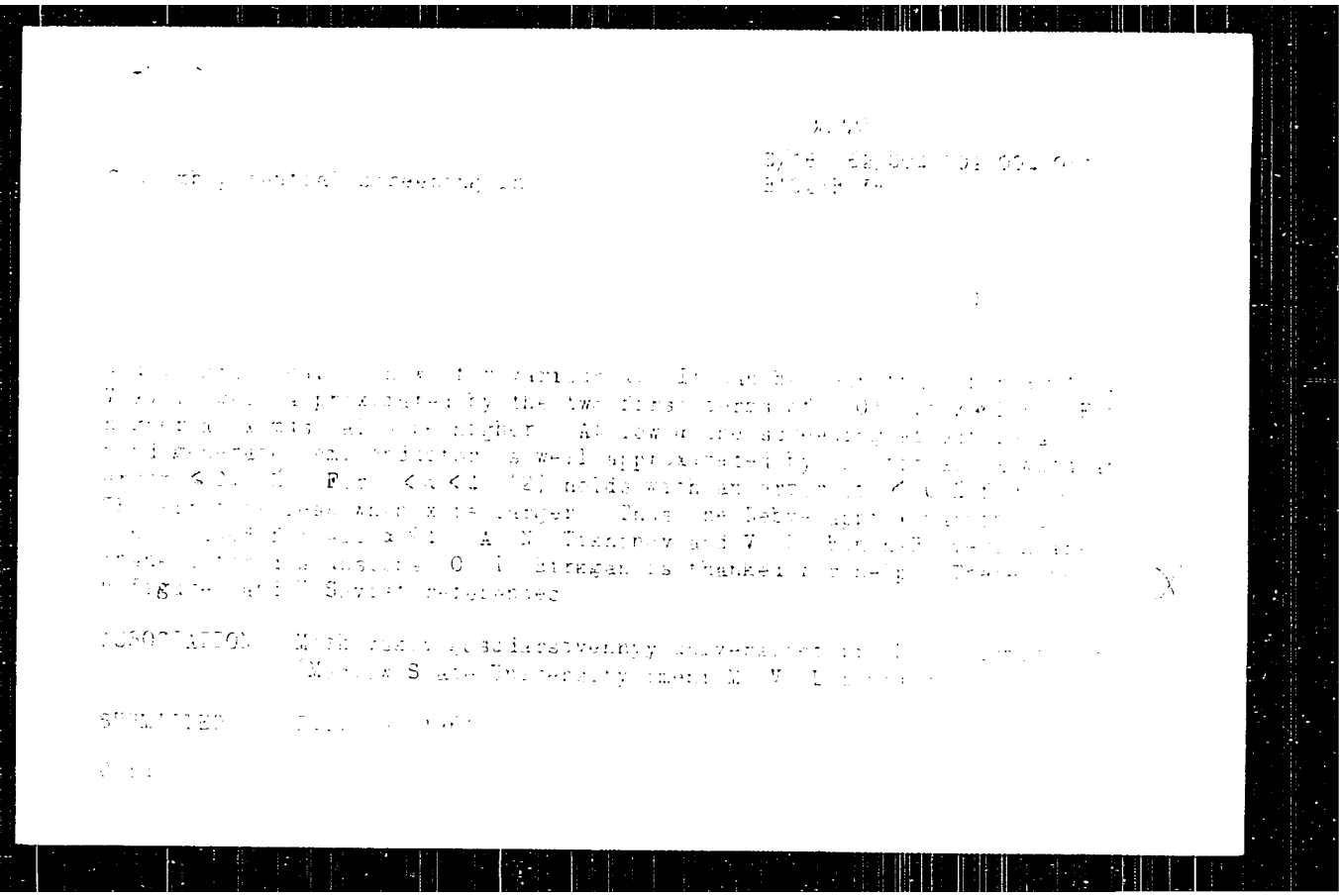
$$\left.\begin{aligned} \rho_k &= \rho_k^0\left\{1 + 0\left(\frac{\ln k}{k^2}\right)\right\};\\ \varphi_k &= \frac{\pi}{4} + \varphi_k^0\left\{1 + 0\left(\frac{1}{k}\right)\right\},\\ \rho_k^0 &= \sqrt{\pi}\left(2k + \frac{3}{4}\right)^{1/2};\\ \varphi_k^0 &= \frac{3\ln\pi\left(2k + \frac{3}{4}\right)}{4\pi\left(2k + \frac{3}{4}\right)} - \frac{\ln\left(\frac{\pi\sqrt{\pi}}{16}\right)}{2\pi\left(2k + \frac{3}{4}\right)}, \end{aligned}\right\} \quad (9)$$

$\rho_{k+1} > \rho_k$, $\lim_{k\to\infty} \rho_k = \infty$, $\varphi_{k+1} < \varphi_k$,

$\lim_{k\to\infty} \varphi_k = \frac{\pi}{4}$.

Now the potential (5) can be given as

Card 4/5



24,7700 (1035, 1043, 1055, 1137) [illegible]

AUTHORS: Bonch-Bruyevich, V. L., and Glasko, V. B.

TITLE: Theory of "cascade" recombination of carriers in nonpolar semiconductors

PERIODICAL: Fizika tverdogo tela, v. [illegible], no. [illegible], [illegible], 10-[illegible]

TEXT: Some problems are investigated which are related to the cascade mechanism of carrier trapping by impurity centers, and the conditions for the occurrence of this mechanism are determined. The spectra of the excited states of neutral and charged traps are calculated. In the latter case the screening effects are also taken into account. Calculations are made for an isotropic model within the framework of the effective-mass method. The Schrödinger equation

$$-\frac{\hbar^2}{2m}\nabla^2\psi + V(r)\psi = (-W)\psi, \text{ where } V(r) = -\frac{\alpha e^2}{[illegible]\, r_0^4}$$ const, α - polarizability

of the center, - dielectric constant, m - effective mass, is considered first. With the characteristic units of length and energy

Card 1/7

Theory of "exciton" recombination ...

... are introduced and ... function of the polar angles θ and φ and $u(x)$ is the solution of

$$L[u] \equiv u'' + \left\{V(x) - \frac{l(l+1)}{x^2}\right\} u = \lambda u \qquad V(x) = \begin{cases} \frac{1}{x^4}, & x > x_0, \\ V_0 = \frac{1}{x_0^4}, & x < x_0, \end{cases} \qquad (*)$$

$$(u(0) = 0, \quad u(\infty) = 0).$$

$l = 0, 1, 2, \ldots$ $x_0 = r_0/$. For $\ldots$ $(*)$ is solvable if and only if ... $L[u] - \lambda u = 0$, $u(0) = 0, u(0)$. If no such exist, it is not solvable.

For $x_0 < \frac{1}{\mu_1^{1/2} [l(l+1)]^{1/4}}$ the first root of $u(\ldots)$ ... for $l = 0$, continued into the interval $x < x_0$, ... second inflection point ... exact solution of $(*)$. ...

Card 2/[illegible]

[illegible] the number of roots of (8) [illegible] determined and tabulated. For $l = 0$,

$$\lambda \simeq \left(\frac{x_0^{-1} - \frac{1}{2}\pi n}{0.4} \right)^4; \qquad (23)$$

$l \neq 0$

$$\lambda \simeq 4 \frac{2x_0^{-1}\sqrt{1-x_0^2L^2} - L\left(\frac{\pi}{2} + \operatorname{arc\,tg}\frac{\sqrt{1-x_0^2L^2}}{x_0L} - \operatorname{arc\,sin} x_0L\right) - n\pi}{2x_0^3\sqrt{1-x_0^2L^2} + x_0L^{-2} + L^{-3}\left(\frac{\pi}{2} - \operatorname{arc\,sin} x_0L\right)}. \qquad (24)$$

are obtained; $L = \sqrt{l(l+1)}$, n is an integral number. The results are used to study the possibility of cascade trapping of carriers in a deep neutral trap. λ and x_0 are taken as characteristic parameters of the problem. The calculations are carried out for germanium and silicon: Germanium:

$\varepsilon = 16$, $J_0 \equiv \frac{me^4}{\varepsilon^2\hbar^2} = 0.01$ev, $W_1 = 0.02$ ev;

Card 3/3

$$\left.\begin{array}{lll} \gamma = 1.89\ \text{Å}, & W_0 = 4.05\ \text{эв}, & \lambda_1 = 5.4 \cdot 10^{-2}, \\ x_0 = 0.77, & r_0 = 1.5\ \text{Å}, & N(x_0) = 1 \div 2. \end{array}\right\} \quad (27),$$

or $r_0 = 3.2 \cdot 10^{-7}$ cm, $\lambda = 1.6 \cdot 10^{-6}$ cm, $a = 3.2 \cdot 10^{-18}$ cm^3.

Silicon: $\varepsilon = 12$, $J_0 = 0.04$ ev, $W_1 = 0.2$ ev;

$$\left.\begin{array}{lll} \gamma = 1.67\ \text{Å}, & W_0 = 3.28\ \text{эв}, & \lambda_1 = 0.152, \\ x_0 = 0.73, & r_0 = 1.21\ \text{Å}, & N(x_0) = 1 \div 2. \end{array}\right\} \quad (28),$$

or $r_0 = 1.9 \cdot 10^{-7}$ cm, $\lambda = 0.8 \cdot 10^{-6}$ cm, $a = 1.6 \cdot 10^{-5}$ cm.

For charged traps in non-degenerate semiconductors,

$$V(r) = -\frac{e^2}{\varepsilon r} e^{-\beta r}, \quad \beta^{-1} = \left(\frac{\varepsilon kT}{4\pi n e^2}\right)^{1/2}. \quad (29)$$

Card 4/[illegible]

where β^{-1} is the Debye radius and n is the concentration of the screening carriers. With

$$x = \beta r,\ \lambda = \frac{2mW}{\hbar^2\beta^2},\ g^2 = \frac{2}{\beta a_0},\ a_0 = \frac{\epsilon\hbar^2}{me^2}, \qquad (30),$$

the effective wave function

$$\left.\begin{aligned} \psi(r) &= Y_l^m(\theta, \varphi)\frac{u(x)}{x}, \\ u'' - \frac{l(l+1)}{x^2}u + g^2\frac{e^{-x}}{x}u &= \lambda u. \end{aligned}\right\} \qquad (31)$$

is obtained, for which the total number of excited levels is estimated quasiclassically:

$$N(0) = \left(\frac{2}{3}\right)^{5/2}\frac{g^3}{2\sqrt{\pi}} \simeq 10\left(\frac{T^oK}{300}\frac{10^{16}}{n\ cm^{-3}}\right)^{3/4}\left(\frac{I_0\ ev}{10^{-2}}\right)^{3/4}\left(\frac{}{10}\right)^{3/4}$$ (32) is obtained

for the n-system. $I_0 = \frac{me^4}{2\hbar^2\varepsilon^2}$ is the characteristic energy of the material.

The numerical results for Ge and Si are given in Tables 6 and 7. There are 1 figure, 7 tables, and 19 references: 11 Soviet and 8 non-Soviet. The four references to English-language publications read as follows: M. Lax. Phys. Chem. Sol. 8, 66, 1959; Phys. Rev, 119, 1502, 1960; W. W. Tyler et al. Phys. Rev. 98, 461, 1955; L. Hulthén, K. Laurikainen. Rev. Mod. Phys. 23, 1, 1951; J. A. Burton et al. J. Phys. Chem., 57, 853, 1953.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: October 4, 1961

Table 6. Total number of quasiclassical levels for Ge ($n \cdot 10^{17}$ cm^{-3}).

Table 7. Total number of quasiclassical levels for Si.

Card 5/5

GLASKO, V.B.; MIRONOV, A.G.

Shielding of the Coulomb potential in nondegenerated semiconductors.
Fiz.tver.tela 4 no.2:336-342 F '62. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Potential, Theory of) (Semiconductors)

BONCH-BRUYEVICH, V.L.; GLASKO, V.B.

Theory of "cascade" recombination of current carriers in homopolar semiconductors. Fiz.tver.tela 4 no.2:510-523 F '62. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Semiconductors) (Crystal lattices)

GLASKO, V.B. (Moskva); ROMANOVSKIY, Yu.M. (Moskva)

Investigating combined natural vibrations of an airplane depending on the flying speed. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.2:105-109 Mr-Ap '62. (MIRA 15:5)
(Airplanes--Vibration)

GLASKO, V. B., GROSHEV, A. L., KUZNETSOV, V. V., SVESHNIKOV, A. G., SEMASHKO, N. N., BALEBANOV, V. M.,

"Study of Individual Charged Particle Motion in "fluted" Magnetic Fields,"

report presented at the 6th Intl. Conf. on Ionization Phenomena in Gases, Paris, France, 8-13 Jul 63

GLASKO, V.B.; SAVARENSKIY, Ye.F.; SHECHKOV, B.N.

Data on phase and group velocities of surface seismic waves. Izv. AN SSSR. Ser. geofiz. no.10:1486-1493 O '63. (MIRA 16:12)

1. Institut fiziki Zemli AN SSSR.

BUDAK, B.M.; VINOGRADOVA, Ye.A.; GLASKO, V.B.; KONONKOVA, G.Ye.; POBORCHAYA, L.V.

Problem of unsteady water movement in a reservoir solved by an electronic computer. Meteor. i gidrol. no.12:14-21 D '63. (MIRA 17:3)

1. Moskovskiy gosudarstvennyy universitet, fizicheskiy fakul'tet.

S/051/63/014/004/008/026
E039/E420

AUTHORS: Bonch-Bruyevich, V.L., Glasko, V.B.

TITLE: Energy levels in a Debye field

PERIODICAL: Optika i spektroskopiya, v.14, no.4, 1963, 495-504

TEXT: A numerical solution of the problem of the energy spectrum of particles in a field with a potential

$$V(r) = -\frac{q^2}{r} \exp -\frac{r}{r_o}$$

is given (r - the distance between centers of force and attracted particles, r_o - the screening radius). The number and position of the eigenvalues of the energy depending on the character of the parameter

$$g = 2\frac{r_o m r^2}{h^2}$$

are determined (m - the mass of the particles). The range of g investigated covers the whole range of temperature and concentration which is of interest and the calculated energy levels are fully tabulated. The transition probability with change of l (principal quantum number $N = n + l + 1$) is also estimated. For g = 10, which is typical for semiconductors,

Card 1/2

Energy levels in a Debye field

the transition frequency $\omega = 1.6 \times 10^{-2} W_B$ where $W_B = \frac{mq^4}{2\hbar^2}$

An expression for the transition probability p is also obtained

$$p \sim 3 \times 10^{-4} \left(\frac{\varepsilon^2}{\hbar c}\right)^3 \frac{\varkappa^2 W_B}{h} \qquad (17)$$

where c - the velocity of light in vacuo, $\varkappa$ - the refractive index. For $\varkappa = 4$ and $W_B = 0.01$ eV

$$p \sim 1.5 \times 10^6 \text{ sec}^{-1}$$

There are 4 figures and 3 tables.

SUBMITTED: July 7, 1962

Card 2/2

BALEBANOV, V.M.; GLASKO, V.B.; GROSHEV, A.I.; KUZNETSOV, V.V.;
SVESHNIKOV, A.G.; SEMASHKO, N.N.

Motion of single charged particles in undulating magnetic fields.
Atom. energ. 15 no.4:318-319 O '63. (MIRA 16:10)

BALEBANOV, V.M.; VOLKOV, B.I.; GLASKO, V.B.; GROSHEV, A.L.; KUZNETSOV, V.V.; SVESHNIKOV, A.G.; SEMASHKO, N.N.

Motion of isolated charged particles in a magnetic field with helical symmetry. Atom. energ. 15 no.5:409-410 N '63. (MIRA 16:12)

ACCESSION NR: AP4037262 S/0208/64/004/003/0564/0571

AUTHOR: Tikhonov, A. N. (Moscow); Glasko, V. B. (Moscow)

TITLE: An approximate solution of Fredholm integral equations of the first kind

SOURCE: Zhurnal vy*chislitel'noy matematiki i matematicheskoy fiziki, v. 4, no. 3, 1964, 564-571

TOPIC TAGS: regularization method, Fredholm integral equation, first kind integral equation, Fredholm equation approximate solution, error estimate

ABSTRACT: The effectiveness of the regularization method developed by A. N. Tikhonov (DAN SSSR, v. 151, no. 3, 1963, 501-504, and v. 153, no. 1, 1963, 49-52) for the approximate solution of the Fredholm integral equation of the first kind (incorrectly defined problem) is presented as applied to the following form of the equation

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ACCESSION NR: AP4037262

$$A[x,z] \equiv \int_{-1}^{+1} K(x,s)\bar{z}(s)ds = \bar{u}(x), \quad -\ell \leq x \leq \ell,$$

$$K(x,s) = \frac{1}{\pi} \frac{h}{(x-s)^2 + h^2} \quad (h = 1),$$

which is encountered in the solution of the inverse problems of the potential theory and in problems of spectroscopy. According to this method the approximations of $\{z^{\alpha}(s)\}$ are sought as functions minimizing a certain functional $M^{\alpha}[z,\bar{u}(x)]$ containing parameter α. The sequences of regularized approximations $z^{\alpha}(s)$ for $\alpha \to 0$ values are presented in a table and graph. It is shown that the best approximation is obtained for $\alpha = 5 \times 10^{-9}$. The function $z(s)$ is

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ACCESSION NR: AP4037262

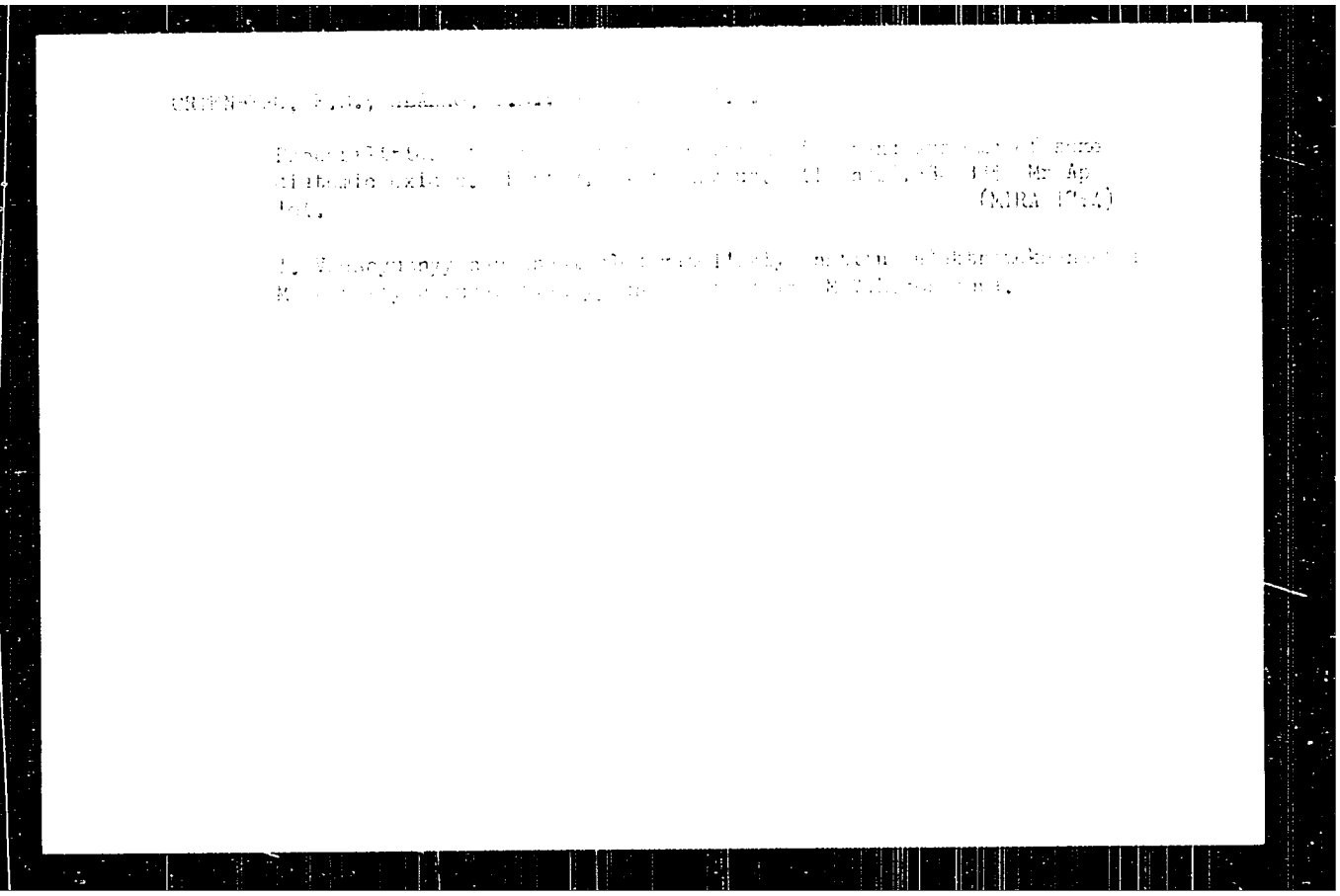
determined with the accuracy of two significant figures. The problem of determining z(s) from the approximate value $\tilde{u}(x)$ with an approximation error δ is studied. The effect of δ on the selection of α for the best approximation of z(s) is analyzed. Graphs representing the dependence of the approximation error ε for the $\bar{z}(s)$ on the α in the interval $10^{-4} > \alpha \geq 5 \cdot 10^{-9}$ are presented. A comparison of the best approximations corresponding to various values of δ with the exact solution $\bar{z}(s)$ is made in the form of graphs. It is shown that the length of the interval $-\ell \leq x \leq \ell$ affects the accuracy of the solution $\bar{z}(s)$. With a decrease in the length of the interval the error ε increases for every given value of α.

ASSOCIATION: none

SUBMITTED: 03Mar64 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: MA NO REF SOV: 002 OTHER: 000

Card 3/3



$$P_n[\eta, x] \equiv \int_{-1}^{1} K[\xi, \eta, x(\xi), x(\eta)]\,d\xi - ax''(\eta) - b[\eta, x(\eta)] = 0 \qquad (5)$$

for one of two types of boundary conditions depending on the additional information supplied with the problem; they quote a uniqueness-existence theorem. For solution they proposed an iteration scheme based on Newton's method, programmed it on a digital computer, and achieved satisfactory results. Orig. art. has: 2 tables, 11 figures,

L 63061-65 EWT(1)/EWA(h) Peb GW

ACCESSION NR: AP5017040 UR/0387/65/000/004/0038/0051
550.342:5.4.2

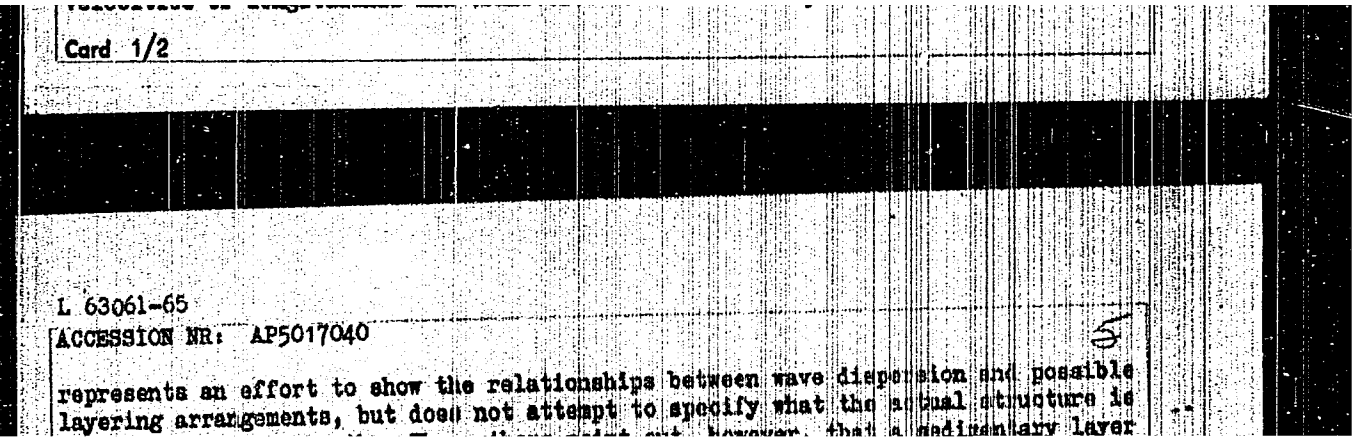
AUTHORS: Savarenskiy, Ye. F.; Glasko, V. B.; Gruzit, Ya. Sh.

TITLE: Dispersion curves of Rayleigh and Love waves as applied to two- and three-layered continental earth crust

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 4, 1965, 38-51

TOPIC TAGS: earth crust, seismic wave, computer programming, phase velocity, harmonic analysis, surface wave

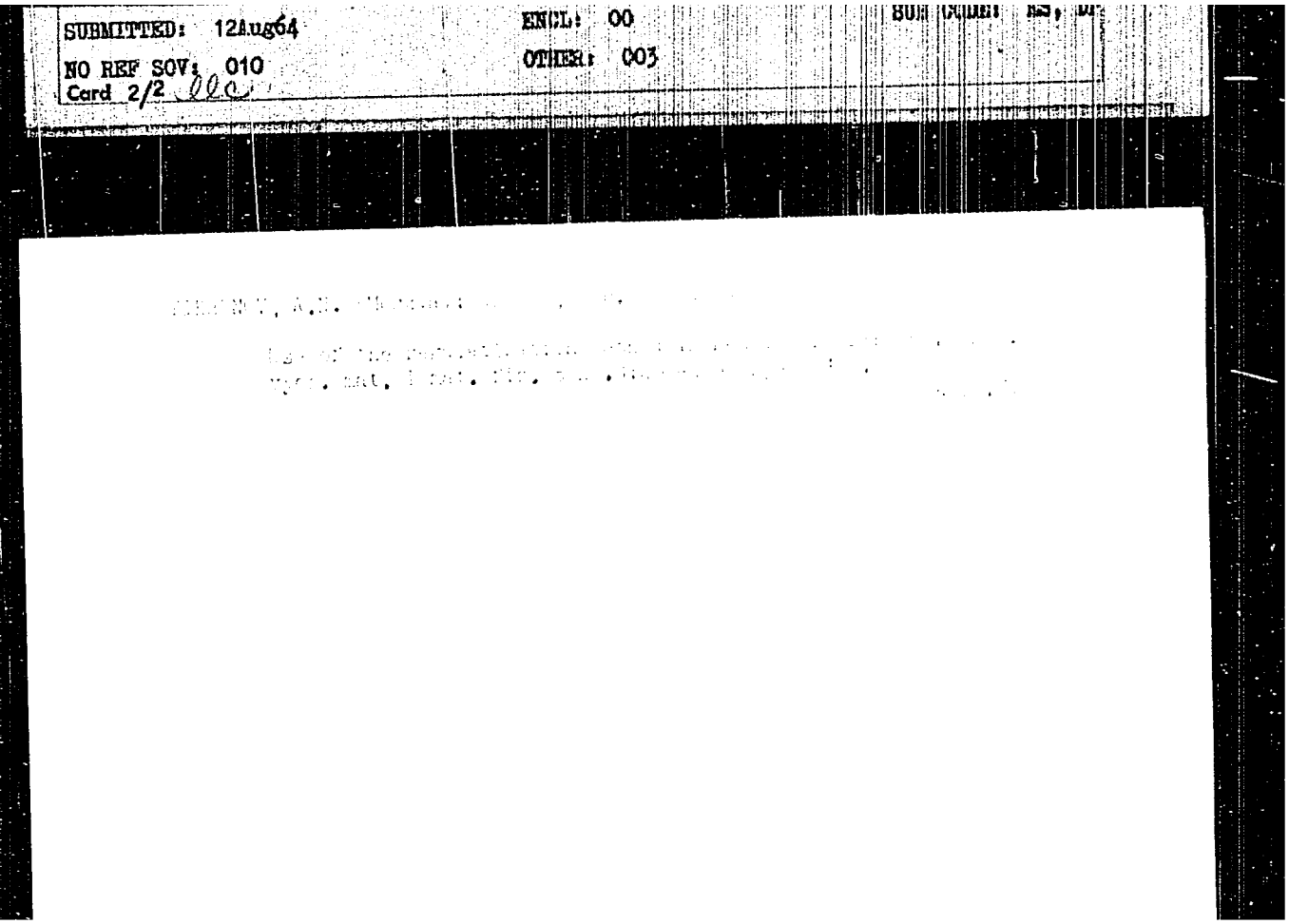
ABSTRACT: Computer results of dispersion of Love and Rayleigh waves in two- and three-layered earth crust are presented and analyzed. A method of programming for computing phase and group velocities of surface seismic waves is described for a



Card 1/2

L 63061-65
ACCESSION NR: AP5017040

represents an effort to show the relationships between wave dispersion and possible layering arrangements, but does not attempt to specify what the actual structure is



L 3613-66 EWT(1)/ETC/EPF(n)-2/EWG(m)/EPA(w)-2 IJP(c) AT
ACCESSION NR: AP5024034 UR/0057/65/035/009/1590/1593
533.9

AUTHOR: Volkov, B. I.; Glasko, V. B.; Sveshnikov, A. G.; Semashko, N. N.

TITLE: On "intermingling" of particles in a composite magnetic field trap

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 9, 1965, 1590-1593

TOPIC TAGS: magnetic mirror, combined magnetic field, plasma injection, particle trajectory, plasma confinement, plasma instability, mathematic physics

ABSTRACT: Trajectories of charged particles in a magnetic mirror system with an auxiliary transverse magnetic field were calculated with the aid of a computer. The auxiliary field was that produced by six current-carrying rods parallel to the axis of the system and symmetrically disposed about it. The calculations were undertaken to determine whether the complex magnetic field would cause sufficient intermingling of particles with different velocities significantly to reduce the anisotropy of the ion velocity distribution of a plasma injected into the system. This question is important because the anisotropic velocity distribution of plasmas in magnetic mirror systems gives rise to cyclotron instability and greatly reduces the confinement time. The charged particles were assumed to be produced within the field by ionization of atoms of a monoenergetic beam moving in the median plane through the center of the system. The ions were accordingly injected at different

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L 3613-66
ACCESSION NAR: AP5024034

radii and with different longitudinal velocities. There were calculated the positions of the successive intersections of the ion trajectories with the median plane and with two other planes normal to the axis. It was found that ions injected at small radii move in nonintersecting regions, and that intermingling of such ions, therefore, does not occur. Ions injected at large radii, however, penetrate into regions of smaller radius, so that on the whole there is intermingling. It was also found that this intermingling would significantly reduce the anisotropy of the velocity distribution of a rarefied injected plasma. Orig. art. has: 5 formulas, 1 figure, and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova, Fizicheskiy fakul'tet (Physics Department, Moscow State University)

SUBMITTED: 22Jan65 ENCL: 00 SUB CODE: ME

NO REF SOV: 003 OTHER: 001

Card 2/2

L 10673-66 EWT(1)/ETC/EWG(m) IJP(c) AT

ACC NR: AP5028325 SOURCE CODE: UR/0057/65/035/011/2083/2091

AUTHOR: Glasko, V.B.; Sveshnikov, A.G.; Semashko, N.N.; Timofeyev, A.V.

ORG: Physics Department, Moscow State University im. M.V.Lomonosov (Moskovskiy gosudarstvennyy universitet, Fizicheskiy fakul'tet)

TITLE: On the deceleration of ions in an arc discharge in a magnetic field

SOURCE: Zhurnal tekhnicheskoy fiziki v. 35, no. 11, 1965, 2083-2091

TOPIC TAGS: plasma injection, magnetic mirror machine, gas discharge plasma, plasma beam interaction, ion beam, ion energy, charge exchange

ABSTRACT: The authors calculate the rate of deceleration of high energy ions owing to their passage through, and interaction with, an arc discharge plasma in a longitudinal magnetic field. The calculations were undertaken because of the practical use of an arc discharge to accelerate the dissociation of molecular ion beams employed for injecting plasma into adiabatic plasma-confining systems. The interaction of a high energy ion with the arc plasma is described by an equivalent viscosity, and the rate of energy loss is calculated for an ion whose Larmor orbit intersects the arc column. With the aid of this result and the one-dimensional Fokker-Planck equation, the energy distribution of the ions is calculated both for the steady state that is established during the injection pulse and for the nonsteady state between pulses. A numerical solution for ion energies between 15 and 62.5 keV is presented graphically.

UDC 533.9

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L 10673-66

ACC NR: AP5028325

For the conditions obtaining in the "Ogra" installation (Soviet thermonuclear mirror machine), the relaxation time for deceleration of the ions by their interaction with the arc plasma is 0.3 msec, and it is concluded that the density of high energy ions is determined mainly by this interaction and not by loss of high energy ions due to charge exchange collisions with neutral atoms. The authors thank L. I. Artemenkov for valuable discussions. Orig. art. has: 33 formulas and 4 figures.

SUB CODE: 20 SUBM DATE: 12Mar65/ ORIG REF: 003 OTH REF: 002

Card 2/2

GLASKO, V. G.

"Increasing Reserves of Daily Production of Tilling and Sowing Aggregates." Cand Tech Sci, Moscow Inst. of Mechanization and Electrification of Agriculture imeni V. M. Molotov, 13 Oct 54. (VM, 30 Sep 54)

SO: Sum 432, 29 Mar 55

means

Kafedra

TURKIN, V.K. (Moskva); GLASKO, V.M. (Moskva)

Some problems in the nonstationary diffusion. Inzh.zhur.2 no.1: 188-192 '62. (MIRA 15:3)

(Diffusion)

GLASKO, V.R.

Student's desk for school geography study rooms. Geog.v shkole 23 no.1:76-78 Ja-F '60. (MIRA 13:5)

1. Yasnopolyanskaya shkola imeni L.N.Tolstogo Tul'skoy oblasti.
(Schools--Furniture, equipment, etc.)

ACCESSION NR: AP4006629 S/0089/63/015/006/0481/0485

AUTHORS: Glaskov, Yu. Yu.; Dubovskiy, B. G.; Ilyasova, G. A.; Kozlov, V. I.; Smelov, V. V.; Sharapov, V. N.

TITLE: Measuring slow-neutron spectra on a physical stand of the reactor at the Beloyarsk State Regional Power Plant imeni I. V. Kurchatov

SOURCE: Atomnaya energiya, v. 15, no. 6, 1963, 481-485

TOPIC TAGS: slow neutron, slow neutron spectrum, neutron flux distribution, neutron spectrum, neutron flux, energy spectrum, time of flight method

ABSTRACT: The flight time method has been used to measure the energy spectra of slow neutrons on the boundary between cells and on a hot channel surface. The lattice of the subcritical flacility in which the measurements have been made is similar to the reactor lattice of the Beloyarsk atomic power plant. The facility under study, measuring 100 x 100 x 100 cm, was placed in the center of the stand-type uranium graphite reactor core. Channels containing 2%-

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ACCESSION NR: AP4006629

enriched uranium were placed along the core perimeter, and the facility was filled with channels containing 1.2%-enriched uranium. The measurements were made for two different facilities, with and without water, in the central tubes and heat-releasing elements of the hot channels, and the spectra were measured by a mechanical selector. The time separation of the impulses took place in 128-channel analyzer, with each channel measuring 32 microseconds in width. A chamber made of stainless steel 1X18H9T and filled with He^3 to a pressure of 18 Atms was used as a neutron detector. The energy distribution of the neutron flux found by processing the experimental data are shown in the enclosure, Fig. 3. The experimental spectra were compared with the rated spectra on the outer boundary of the cell and the spectra on the boundary between the graphite and uranium zones. The rated values were "cross linked" with the experimental ones in the moderation region on the boundary between the cells. The comparison thus included both the energy and spatial distribution, and the results appear to agree with the experimental data.

Card 2/5

ACCESSION NR: AP4006629

"The authors express their gratitude to L. A. Matalin for the development and construction of the time analyzer, to P. S. Klemashev for designing the mechanical interrupter, and to V. V. Orlov and A. G. Novikov for their useful comments."
Orig. art. has: 3 Figures and 3 Formulas

SUBMITTED: 27Apr63 DATE ACQ: 07Jan64 ENCL: 02

SUB CODE: NS NR REF SOV: 005 OTHER: 002

ASSOCIATION: none

Card 3/5

AL'BOV, M.N., doktor geologo-mineralogicheskikh nauk; GLUSKOVSKIY, V.A., retsenzent.

[Sampling ore deposits in prospecting and mining operations] Oprobovanie rudnykh mestorozhdenii pri razvedke i eksploatatsii. Izd. 2., perer. i dop. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoy metallurgii, 1952. 214 p. (MLRA 6:5)
(Ores--Sampling and estimation)

GLASMAN, Y M

USSR/Colloids
Chemistry - Colloids

Apr 1947

"Acclimatization with Coagulation of Hydrophobic Colloids by Electrolytes," Y. M. Glasman, B. E. Tartakovskaya, Technological Institute of Light Industry, Kiev, 15 pp

"Kolloidnyy Zhurnal" Vol IX, No 4

Largely mathematical account of experiments, illustrated with formulae and graphs. Shows theoretically and empirically that the degree of negative acclimatization actually depends upon the experimental conditions themselves; the published data on acclimatization, due to the

17T78

USSR/Colloids (Contd)
Chemistry - Colloids

Apr 1947

arbitrary and diverse nature of the conditions of the experiment, are not comparable and have an adventitious nature. Advice and use of laboratory contributed by Prof M. V. Torbin. Submitted 20 Nov 1946.

17T78

GLASNEROVA, E.; TELTSCHEROVA, L.

Physiological characteriation of intermediate wheat [with summary in German]. Chekh. biol. 1 no.1:27-34 '52. (MLRA 6:12)

1. Institut rastenivevodstva, Praha.
(Wheat)

L 26375-65 EWT(1)/EEC(t) Peb IJP(c) RM
ACCESSION NR: AP4040762 Z/0042/64/000/006/0345/0357

AUTHOR: Hlasnik, Ivan (Glasnik, I.) (Engineer, Candidate of sciences); Polak, Milan (Engineer)

TITLE: Temperature dependence of Hall generators and its compensation

SOURCE: Elektrotechnicky casopis, no. 6, 1964, 345-357

TOPIC TAGS: Hall generator, temperature dependence, thermal compensation, magnetic field effect, Hall generator parameter, Hall circuit, power supply circuit, InAs Hall generator, loading, temperature independent resistance, proton resonance, temperature error, control circuit

ABSTRACT: The article attempts to analyze the problem of the temperature dependence of Hall generator parameters and the accuracy of various types of thermal compensation and the effect of the magnetic field on it, and also the resulting design method to be used for thermal compensation, as there is no similar study to be found in the literature known to the authors. In the study of the two types of

ture dependence of the Hall voltage in the Hall and power supply circuit is also

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ACCESSION NR: AP4040762

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analyzed. The two types of thermal compensation discussed result in decreased Hall generator efficiency, decreased efficiency of the compensation in the Hall circuit, and decreased sensitivity when I_1 = constant, where I_1 is the generator feed current. This study, however, does not enter into problems of efficiency, and limits itself to the following types of compensation: 1) compensation in the power supply circuit: a) in the case of measurements made under no load condition, b) in the case of a loading with temperature independent load resistance R_z; 2) compensation in the secondary (Hall) circuit. In order to verify theoretical conclusions, measurements were made of the temperature dependence of several InAs Hall generators with compensation by the two methods described above. The currents and voltages were measured by the compensation laboratory compensator QLK-fy meters. The magnetic fields were measured with a proton resonance with an accuracy on the order of 10^{-4}. The accuracy of all the measurements was about 0.0[illegible]%. It is concluded on the basis of the theoretical analysis and the experimental results that in the case of InAs Hall generators with a Hall constant of $4 \cdot 10^{-4}$ m^3/As and a mobility of around $2.2T^{-1}$ it is relatively easy to make such a compensation of temperature dependence, that in the 15 to 60°C temperature range, the temperature error is less than $\pm 0.1\%$. It follows, that in view of the temperature error of these Hall generators, it is possible to use the most exacting measure-

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ACCESSION NR: AP4040762

ment and control circuits. The authors express their gratitude to Engineer J. Michalkov for certain measurements and to M. Birov for the preparation of the samples and preparations for measurement. Orig. art. has: 9 diagrams and 18 formulas.

ASSOCIATION: Elektrotechnicky ustav SAV, Bratislava (Electronics and Electrical Engineering Institute, SAV)

SUBMITTED: 03Aug63 ENCL: 00 SUB CODE: EM, TD

NO REF SOV: 002 OTHER: 010

Card 3/3

L 47037-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) AT/JD

ACC NR: AP6029801 SOURCE CODE: UR/0089/66/021/002/0130/0131

AUTHOR: Borovik, Ye. S. (deceased); Busol, F. I.; Glasov, B. V.; Kovalenko, V. A.; Skibenko, Ye. I.; Yuferov, V. B.

ORG: none

TITLE: VGL-2 cryogenic magnetic trap

SOURCE: Atomnaya energiya, v. 21, no. 2, 1966, 130-131

TOPIC TAGS: magnetic trap, hydrogen plasma, deuterium, plasma heating, plasma injection, cryogenic liquid cooling/VGL-2 magnetic trap device

ABSTRACT: Since one of the means of producing a hot plasma is to inject intense beams of fast neutral hydrogen or deuterium atoms into a magnetic field, where they can be ionized, the authors describe the processes accompanying the filling of a small magnetic trap in which a strong magnetic field is produced. (Fig. 1) The trap differs from earlier designs in that the strong magnetic field up to (105 kG) is produced by a copper coil cooled with liquid nitrogen, which is also used to cool the outside of the vacuum chamber and thus permits a vacuum as low as $\sim 5 \times 10^{-10}$ Torr to be maintained in it. An Ardenne type source is used for the hydrogen-ion beam, the charge exchange being in a supersonic CO_2 stream condensed on a surface cooled to 20.4K. The fraction of the neutral beam ionized in the wording region of the chamber

Card 1/3 UDC: 533.9

L 47037-66

ACC NR: AP6029801

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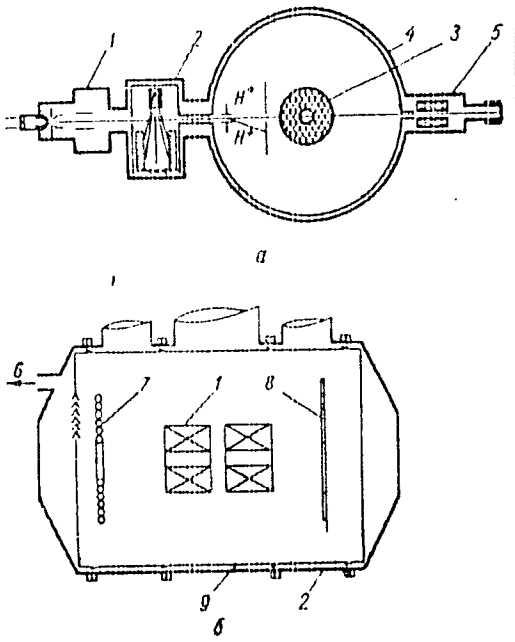

Fig. 1. Diagram of VGL-2 trap. a- section along beam axis, b - along field axis; 1 - ion source, 2 - charge exchange chamber, 3 - magnetic system, 4 - vacuum jacket, 5 - beam inlet, 6 - to pump, 7 - helium condensation pump, 8 - hydrogen pump, 9 - nitrogen screen

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L 47137-66
ACC NR: AP6029801

was of the order of 5×10^{-5}. The plasma density was determined from the intensity of flux of fast atoms leaving the plasma as a result of charge exchange between the ions and the residual gas, and also from the value of the injected current in the trap. The values obtained were $\sim (3-4) \times 10^7$ and $\sim 3 \times 10^8$ cm^{-3}, respectively, the difference being due to a small redistribution of the ion velocities in the plasma. [02]
Orig. art. has: 2 figures and 2 formulas

SUB CODE: 20/ SUBM DATE: 01Apr66/ ORIG REF: 003/ OTH REF: 003 / ATD PRESS: 5089

Card 3/3

L 27470-66 EWT(1) IJP(c) JW

ACC NR: AP6007849 SOURCE CODE: UR/0120/66/000/001/0227/0227

AUTHORS: Grishin, S. F.; Glasov, B. V.; Grishina, Ye. Ya.

ORG: none

TITLE: Cooled coils to obtain stationary magnetic fields

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1966, 227

TOPIC TAGS: solenoid, magnet, cryogenic liquid cooling

ABSTRACT: This is a continuation of earlier research on producing a stationary magnetic field by means of coils cooled with liquid hydrogen (Zh. tekhn. fiz. v. 34, no. 4, 459, 1961). The present solenoid construction consists of free-standing coils of commercial copper wire of 0.8 mm diameter, cooled by freely boiling liquid hydrogen or nitrogen. The cooper wires were interlined with pressboard in a manner to produce channels for the liquid to flow inside the solenoid. Cooling decreased the resistance of the wire by a factor of 94, which could be higher were the copper purer. A coil with 25000 turns, inside diameter 5 cm, outside diameter 26 cm, 22.5 cm long, and with a filling factor of 0.58 produced a magnetic field of 30 kG (current 26 amp), consuming 3 kw of electricity

Card 1/2 UDC: 538.244.2:621.318.371

L 27470-66

ACC NR: AP6007849 O

and 6 l/min of liquid hydrogen. Cooling with nitrogen produced a weaker field. Such solenoids can be fed from storage batteries or rectifiers without special filters, and are cheaper to manufacture than solenoids of pure aluminum wire or superconducting solenoids. Orig. art. has: 2 figures.

SUB CODE: 09, 14/ SUBM DATE: 05Jan65/ ORIG REF: 001

Card 2/2 BLG

S/057/62/032/005/009/022
B163/B102

24 (7)6

AUTHOR: Glasov, O. A.

TITLE: On the self-modulation of a helical electron beam moving through a plasma in a magnetic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 5, 1962, 575-578

TEXT: Previous theoretical research on a proposed new method of plasma-heating (ZhTF, v. 31, 84, 1961) is continued. It was suggested that ion cyclotron oscillations be excited in the plasma by means of modulated helical electron bunches with very small helical pitch moving along a magnetic field. The perturbations of a helical electron bunch are studied in a small-signal approximation. For perturbations propagated along the direction of motion z as exp i(γz − ωt) the propagation constant γ is calculated. In an example where the initial energy of the electrons is 10^5 ev, the initial velocity component in direction z is $1.6 \cdot 10^9$ cm/sec, the electron density in the beam is 10^8 cm^{-2}, the plasma density is

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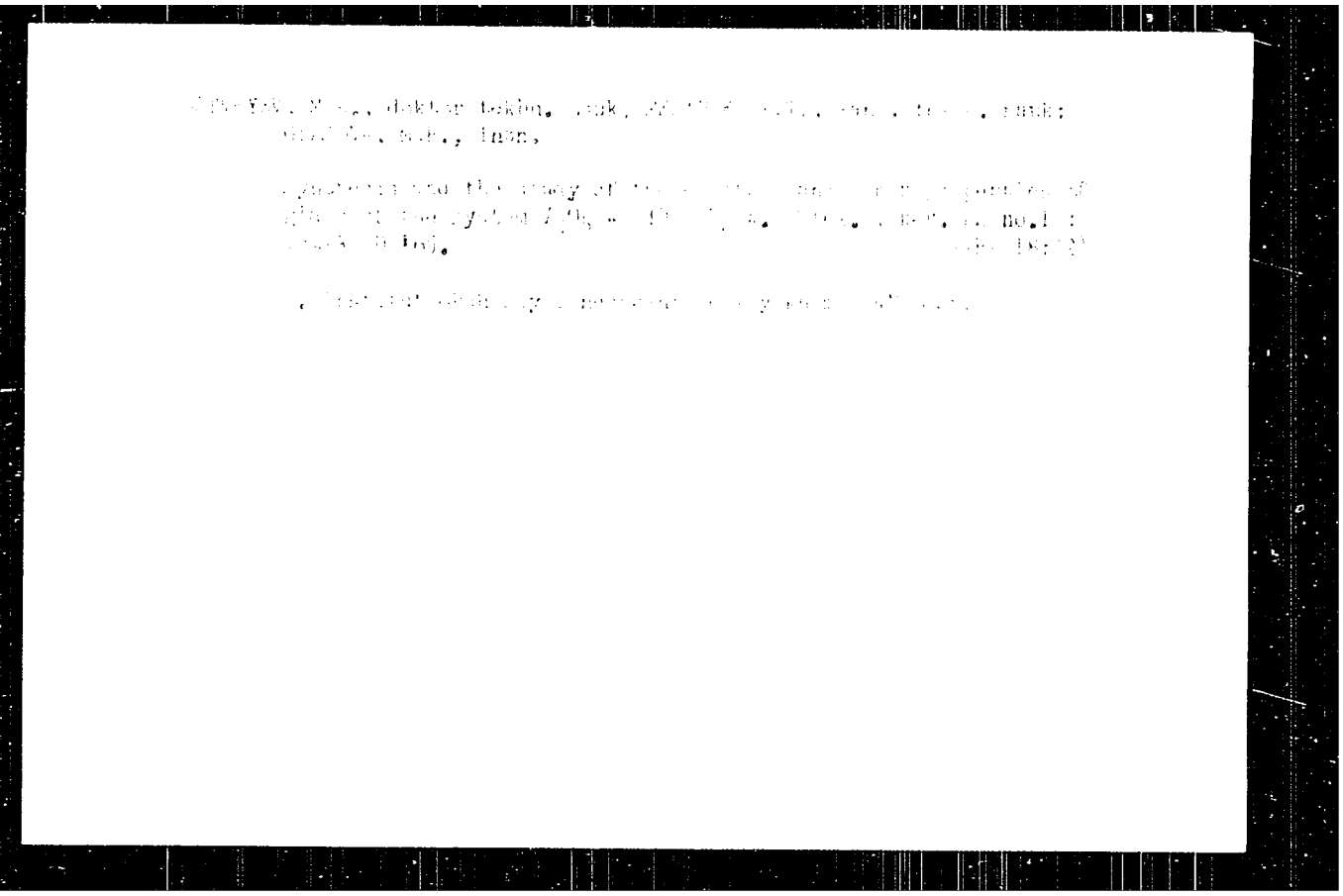
10^{14} cm^{-3}, the magnetic field is 10^3 gauss and $\omega = 10^7$ sec^{-1}, it is found that a length of a few meters is sufficient to produce a completely self-modulated beam.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR, Khar'kov
(Physicotechnical Institute of the AS UkrSSR, Khar'kov)

SUBMITTED: February 20, 1961



ACC NR: AP6012255 (A) SOURCE CODE: UR/0072/65/000/012/0012/0013

AUTHOR: Matveyev, M. A. (Doctor of technical sciences); Mel'nik, M. T. (Candidate of technical sciences); Glasova, M. P. (Engineer)

ORG: Institute of General and Inorganic Chemistry, AN BSSR (Institut obshchey i neorganicheskoy khimii AN BSSR)

TITLE: Synthesis and investigation of the electrical and other properties of glasses of the V_2O_5-CdO-P_2O_5 system

SOURCE: Steklo i keramika, no. 12, 1965, 12-13

TOPIC TAGS: glass property, electric resistance, thermal emf, semiconductivity, vanadium compound

ABSTRACT: The authors synthesized 36 glass compositions in the V_2O_5-CdO-P_2O_5 system and established the region of vitrification. The glasses were founded in a Silit furnace at 900–1200C. They had a dark color and most were distinguished by a tendency toward crystallization. The working properties of the glasses were improved by increasing the content of P_2O_5. The chemical resistance of the glasses with respect to boiling water, the temperature at the start of softening, the electrical resistance, and thermal emf was studied and the

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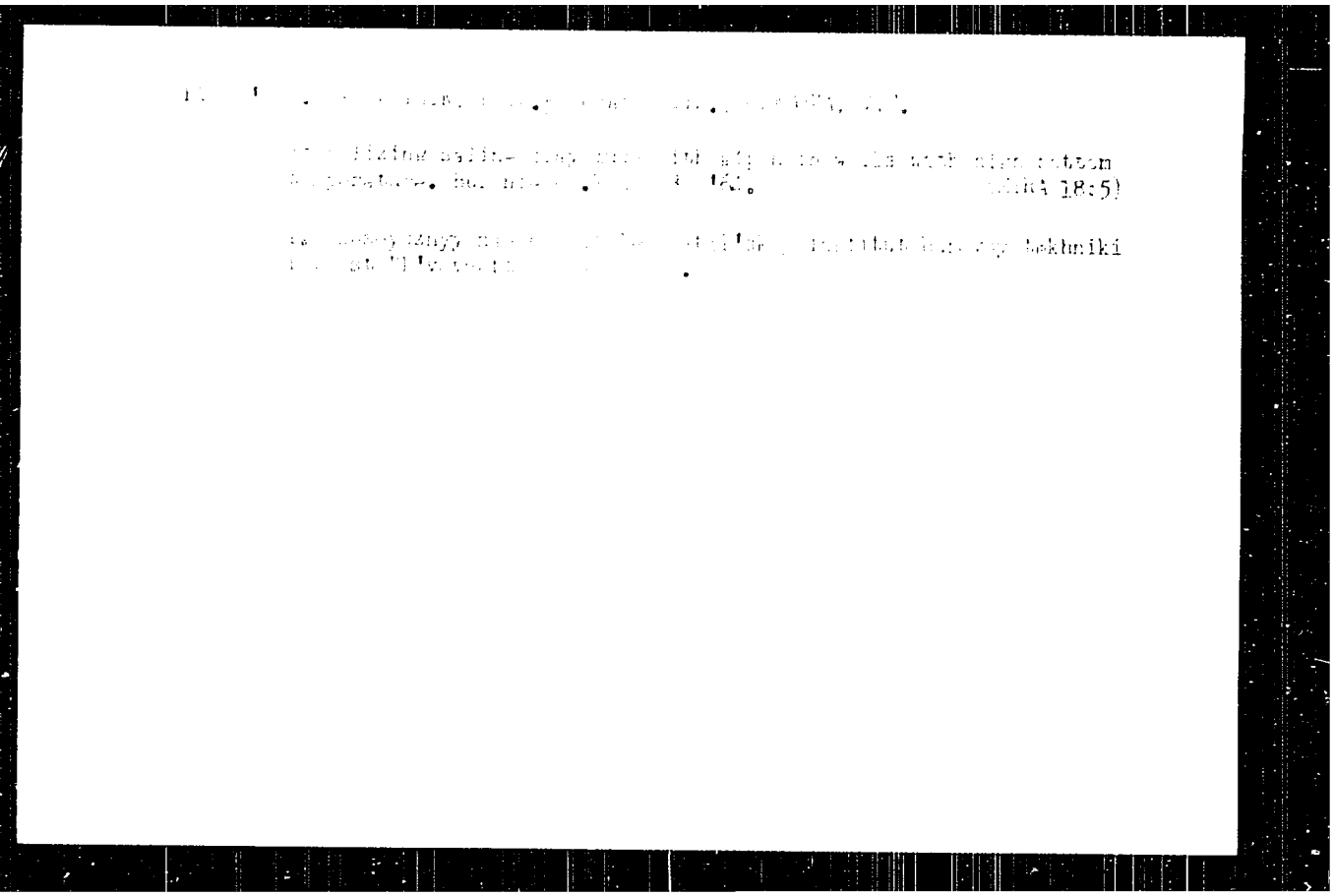
ACC NR: AP6012255

reactivation energy of the current carriers was calculated. The glasses containing 60 mol.% and more V_2O_5 had the lowest chemical resistance. They completely dissolved in water upon boiling. The softening point of these glasses changed depending upon the composition in the 300—600C range and increased with an increase of V_2O_5 concentration. The investigated glasses had a definite thermal emf varying from 100 to 350μ $V \cdot deg^{-1}$. The electrical conductivity of the glasses of this system increased with an increase of V_2O_5 in the glass or with an increase of the ratio V_2O_5: P_2O_5. The results of these experiments can be useful in the theoretical elaboration of the problems of vitrification and the mechanism of conductivity of amorphous semiconductors, and the glasses with semiconductor properties are of definite interest in studying the role of the "short-range order" in the electrical properties of vitreous substances. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: None / ORIG REF: 006/ OTH REF: 003

Card 2/2



ACCESSION NR: AP4034603 P/0007/64/000/018/0012/0014

AUTHOR: Glass, Andrzej (Master engineer)
TITLE: (Helicopter) SM-2
SOURCE: Skrzydlata Polska, no 18, 1964, 12-14

TOPIC TAGS: general-purpose helicopter, ambulance, cooler, liquid antifreeze, antifreeze

ABSTRACT: The SM-2 "Universal" helicopter (śmigłowiec) was redesigned in 1957-59 from the SM-1, retaining its motor, transmission, rotor, propeller and, in part, tail boom and main carriage. It holds a pilot and 4 passengers. The ambulance version holds a stretcher, 50 kg of medical equipment, a physician and pilot in the cabin and 1-2 patients in gondolas on sides of fuselage. The first prototype was flown in 1959 and series production was begun in 1961, No. 002 being used by the Central Sanitary Aviation Team in Warsaw. It takes 20 minutes to remove the three seats from the passenger model and install the tracks for the stretcher to convert it into an ambulance. The lifting model, having wide sliding doors and equipped with a hydraulic hoist for loads up to 120 kg, can be used for transportation or rescue at sea. Pontoons are also

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ACCESSION NR: AP4034603

planned. Attachment of an extra 140-liter tank can extend its range to 500 km. Two coolers for motor and oil, one controllable, permit use under various weather conditions. The propeller, 14.33 m in diameter, with a maximum of 226 rpm, has three rectangular-trapezoidal blades with steel-tubing beams of variable cross-section along the margins, and wooden ribs. On the attack edge of the blade is a liquid antifreeze installation. The fuselage, drive, landing gear and paint are also described in detail. Length of fuselage 12.08 m; height 3.3 m; Weight 1,925 kg; pay load 625 kg; total weight 2,550 kg; power loading 4.4 kg/hp; air load 16.0 kg/sq m; maximum speed 170 km/hr; cruising speed 130 km/hr; ascending speed 4.5 m/sec; ceiling 3,500 m; range 300 (max. 500) km; flight time 3.2 hr. Orig. art. has: 7 figures

ASSOCIATION: None

SUBMITTED: 00	DATE ACQ: 11May64	ENCL: 00
SUB CODE: AC	NO REF SOV: 000	OTHER: 000

CARD 2/2

GLASS, A., inzh. (Warshawa)

"Wilga." Grazhd. av. 22 no. 11:31 N '65. (MIRA 18:11)

ACC NR: AM6028922 Monograph PO/

Blasik Andrzej; Glass, Andrzej (Master in Engineering); Madeyski, Stanislaw (Master in Engineering), comps. collection of articles

Aircraft design in People's Poland (Konstrukcje lotnicze Polski Ludowej; praca zbiorowa) [Warsaw] WKL. 1965. 250 p. illus., index., tables. 5200 copies printed.

TOPIC TAGS: aircraft, aircraft engine, helicopter, glider

PURPOSE AND COVERAGE: A handbook presented in popular form for all interested in aviation, this work reviews the aviation industry in Poland since WW II. The first part describes the historical progress of design in Polish aviation; the second part gives technical data, descriptions, and illustrations of gliders, planes, and helicopters built in Poland since WW II. A table is included of domestic and foreign aircraft engines used in Polish aircraft. The nation producing the engine is designated, together with the aircraft in which it is used, the type of aircraft, its horsepower, rpm, number of cylinders, cooling systems, and displacement. The preparation of this handbook was accomplished jointly by the following authors: S. Madeyski (pages 7-18 and 21-26); A. Glass (pages 18-20, 32-35, 96-99, and 128-252); and A. Blasik (pages 28-31, 36-95, 100-127).

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Card 1/2

ACC NR: AM6028922

SUB CODE: 01/ SUBM DATE: 22Sep64/

Card 2/2

ACC NR: AP6032013 SOURCE CODE: PO/0101/66/000/015/0003/0007

AUTHOR: Glass, Andrzej (Master engineer)

ORG: none

TITLE: The PZL-104 "Wilga-3" [aircraft]

SOURCE: Warsaw. Instytut lotnictwa. Biuletyn informacyjny, no. 15, 1966, 3-7

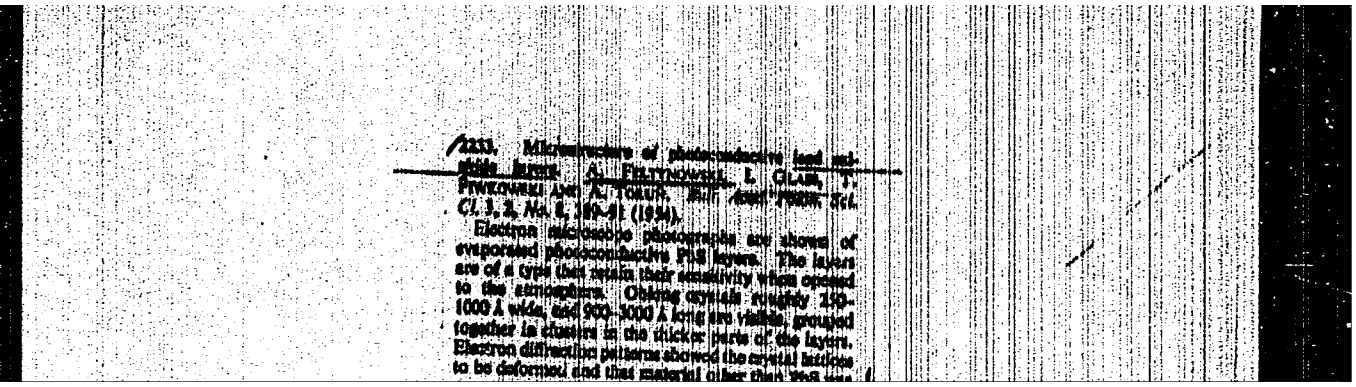
TOPIC TAGS: utility aircraft, passenger aircraft, aircraft specification/PZL-104 aircraft, Wilga-3 aircraft, AI-14R engine

STOL aircraft, aircraft engine,

ABSTRACT: A new version of the PZL-104 aircraft, equipped with an AI-14R engine, is designated the "Wilga-3". The Wilga-3 is a development of earlier Wilga types. A design staff headed by Chief Engineer A. Frydrychevicz redesigned the aircraft ... to receive the 260-hp AI-14R radial engine, and as a result the Wilga has become one of the best four-seaters in the STOL category, with the rate of climb with cargo being increased from 4.3 to 8.5 m/sec. The following are special versions of the Wilga-3: executive (Wilga-3P); dual-control type (Wilga-3Ad); ambulance (Wilga-3S); agricultural (Wilga-3R). Complete technical data and flight characteristics are given. Orig. art. has: 7 figures.

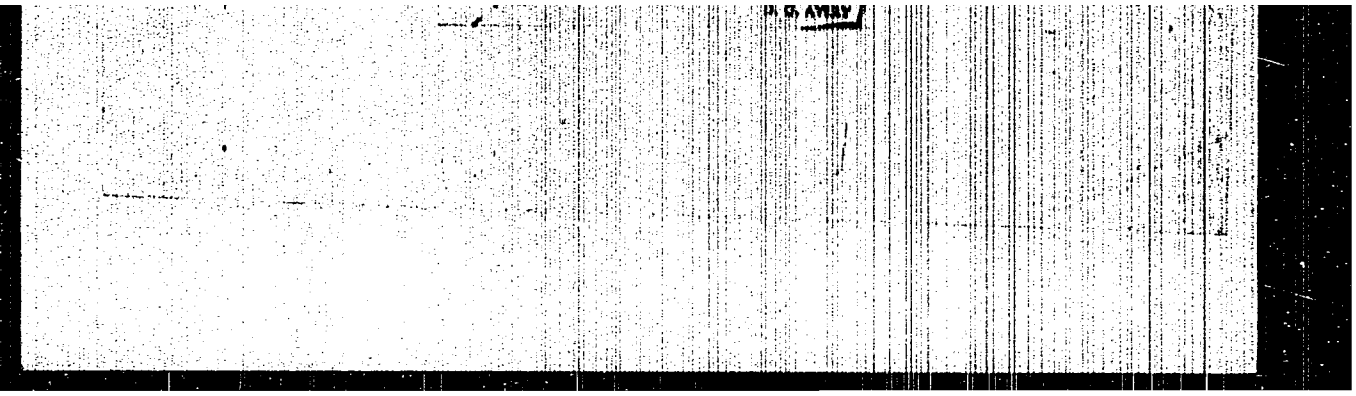
SUB CODE: 01, 21/ SUBM DATE: none

Card 1/1



/2333. Microstructure of photoconductive lead sulfide layers. A. FILIPKOWSKI, L. GLAZE, T. PIWKOWSKI and A. TOLUK. *Brit. J. appl. Phys. Sci. Cl.* 3, 2, No. 2, 189–91 (1954).

Electron microscope photographs are shown of evaporated photoconductive PbS layers. The layers are of a type that retain their sensitivity when opened to the atmosphere. Oblong crystals roughly 250–1000 Å wide, and 900–3000 Å long are visible, grouped together in clusters in the thicker parts of the layers. Electron diffraction patterns showed the crystal lattices to be deformed and that material other than [illegible]



GLASS, I., FALTYNOWICZ, A., PIEKOWSKI, T., and TOMIK, A.

"Microstructure of Photoconducting Layers in Lead Sulfide".
Byul. Polsk. AN. Otd. III, 2, No 8, pp 395-397, 1954

The fine crystalline structure of photoconducting PbS was studied under electron microscope and the chemical structure by electron diffraction. Crystals have an elongated shape 900 - 3000 A long and 250 - 1000 A wide. The diffraction pattern indicates a regular face centered structure. (RZhFiz, No 10, 1955)

SO: Sum No 812, 6 Feb 1956

Class [illegible]

POLAND / Structural Crystallography. E-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957 No 9204

Author : Fel'dmanovskiy, A., Glass, I., Grelevich, L.
Title : Electron Diffraction Investigation of Semiconducting Layers of PbTe.

Orig Pub : Bynl. Pol'skoy AN, 1955, otd. 3, No 11, 595-597

Abstract : Electron diffraction methods were used to investigate photosensitive layers of PbTe, spattered in vacuum. The X-ray diffraction investigations have shown that PbTe, used in the form of a powder for the preparation of photosensitive layers, has a structure of the type NaCl with a period of 6.36 A. Electron diffraction patterns for the spattered layer give a system of rings corresponding to a primitive lattice with a period 6.33 A. This can be explained by the fact that the thin spattered layer of PbTe is a new variant, so that the atoms of lead and tellurium apparently

Card : 1/2

POLAND / Structural Crystallography. B-3

Abs Jour - . Ref Zhur - Fizika, No 4, 1957, No 9204

Abstract : arrange themselves statistically in the sites of the above lattice. With the aid of an electron microscope there was also observed the formation of individual crystals in the PbTe layers under the influence of irradiation by a beam of electrons.

Card : 2/2

GLASS, I.

POLAND/Electronics - Photocells and Semiconductor Devices H-8

Abs Jour : Ref Zhur - Fizika, No 4, 1958, No 8777

Author : Feltynowski, A., Glass, I., Hasinski, T., Turan, A.
Inst : Institute of Physics, Polish Academy of Sciences, Warsaw, Poland

Title : Microstructure of Photoconducting Lead Sulfide Layers

Orig Pub : Acta phys. polon., 1956, 15, No 3, 275-282

Abstract : The microstructure of PbS layers was investigated by the methods of electron diffraction and electron microscopy. The PbS layers were obtained by evaporation in vacuum, and the compounds for the investigations were obtained by the method of formvar pseudo replicas, and also by direct spattering on formvar, collodion, or aluminum films. The PbS layers consisted of crystals measuring 200 to 300 A. The type of substrate did not seem to affect the size and shape of the crystals. The diffraction patterns from directly spattered layers correspond to face-centered lattice of the NaCl type. The diffraction patterns of the pseudo replicas

B

GDR/Physical Chemistry. Crystals.

Abs Jour: Ref Zhur-Khim., No 5, 1959, 14376.

Author : Feltynowski A., Glass I, Grelewicz L.
Inst :
Title : The Fine Structure of Photoconducting Layers of PbTe.

Orig Pub: Expl. techn. phys., 1958, 6, No 1, 17-20.

Abstract: The accumulation of dust in the vacuum of a PbTe film coating was examined electronomicroscopically and electrographically. On the basis of the obtained results, it is assumed that in the type of the NaCl lattice with a 6.42 A, the bundles are statistically occupied by Pb or Te atoms, leading to the occurrence of an electronogram which corresponds to a primitive cubic lattice with a 3.21 A. - M. Polteva.

Card : 2/2

5

GLASS, L.

Coal surfact analysis by means of an electron microscope. In English. p. 75
ACTA PHYSICA POLONICA. Warszawa, Vol 15, No. 1, 1956

SO: EEAL, Library of Congress, Vol 5, No. 11, August, 1956

GL[illegible]SON, A. A.

25237. GL[illegible]ON, A. A. Metod Rannego Zakrytiya Bronkhov i Ostatochnoy Polosti Kaverny Mezhreberny[illegible]i, Sosudisto-Myshechny[illegible]i Stebiya Posle Pnevmolizа [illegible], Problemy, Tuberkul[illegible] 1949, No. 4-S. 32-35.

SO: Letopis' No. 33, 1949

GLASSON, A.A.

35490. Bor'ba s neperezhitayemymi plevral'nymi srashcheniyami metodom gidravlicheskoy preparovki. v SB: Voprosy grudnoy khirurgii. T. III. M., 1949, c. 183-87.

Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949.